

Brownfield Redevelopment

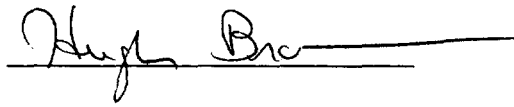
An Honors Thesis (HONRS 499)

by

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Purpose of Thesis

This paper is intended to summarize the process and need of brownfield redevelopment. It explores the negative impacts that real or perceived contaminated sites have on local communities, and it explains the processes, policies, laws, regulations, and actions that must be taken in order to cleanup a contaminated site to levels that are environmentally acceptable and economically beneficial for a community. Along with these explanations, schemes to market these properties and devices used to protect investors, developers, and purchasers are discussed in detail. Finally, negative and positive effects are summarized in order for the reader to see why brownfield redevelopment is a worthy activity.

## **Brownfield Redevelopment**

Have you ever driven through an urban area and seen an old, abandoned, boarded-up gas station, dry cleaner, or even an industrial park? In almost every city in the United States, these industrial and commercial sites, known as brownfields, can be found. The United States Environmental Protection Agency has defined brownfields as, "abandoned, idled, or underused industrial and commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination that add cost, time or uncertainty to a redevelopment project" (Pichtel, 2). In the past, environmental policies discouraged prospective purchasers, developers, lenders, and local governments from acquiring properties known as brownfields for cleanup and productive reuse. Today, however, many cities have taken advantage of recently created federal and state programs that offer financial incentives and liability protections in exchange for voluntary investigation and cleanup of brownfield properties, and as a result of these programs, brownfield zones have been and will be cleaned up and returned to productive, sustainable use in a relatively short period of time and in a manner that poses lesser degrees of financial and environmental risk to potential developers and investors.

Brownfields have been defined as, "disused, former industrial or manufacturing sites that are contaminated to some degree" (Oppenheim, 25). Brownfields can be found on sites that were formerly occupied by such businesses as dry cleaners, gas

stations, landfills, utility-owned sites where manufactured gas plants once operated, and industrial parks (Rasher, 54). In the United States, the majority of these real or perceived contaminated sites are located in urban settings with a band of high concentration being found in a line that runs from the Midwest up through the Northeast. According to the United States Environmental Protection Agency the estimated number of brownfields in the United States ranges from 500,000 to 750,000 (Petrovich, 16). The brownfield problem is expanded upon when the average cleanup cost of one site is considered. It is estimated that it costs 400,000 dollars to sufficiently "decontaminate" one site (Schriner, 18). Multiply this dollar amount by 500,000 sites, the low range, and the cleanup of every brownfield in the country exceeds 200 trillion dollars.

Brownfields often times have very negative impacts on the communities in which they are found. AIDS, homicide, infant mortality, teenage pregnancy, and tuberculosis are high in neighborhoods dominated by brownfields, and this may be attributed to reduced police, fire, and sanitation services (Greenberg et al., 1759). Brownfields contribute to inner-city blight, depressed property values, and environmental justice issues ("Brownfields:...", 163). They are economically distressed holes in the urban fabric in which high crime, a nonexistent tax base, and unemployed, unskilled local residents exist (Schriner, 18). These real or perceived contaminated sites drag surrounding property and community values down, and they also encourage suburban sprawl which in turn leads to a

destruction of open space. On top of all of these negative impacts, brownfields diminish economic resources and political power ( Kibel, 589).

Since the 1950's, there has been a strong movement by the United States population from urban centers to suburban locations. In fact the number of citizens living in suburbs is greater than the number of people living in cities, and open space that surrounds the urban centers is being converted to residential and commercial uses. This movement has left urban housing and commercial property vacant and polluted (Kibel, 589).

A new trend is emerging, however. Public policy and economic development encourages the reuse of brownfield sites even though redeveloping on these sites is risky (Schriner, 18). One may ask, "Why redevelopment now?" The answer is simple. Public outcry has forced liability laws to become less restrictive, and this in turn lessens the liability for those willing to redevelop brownfields. Less restrictive cleanup standards have also been implemented for brownfield redevelopment projects, and the financial incentives have been increased significantly (Rasher, 54). Governmental agencies have also worked to streamline the permit process, to provide grants and/or low-interest loans for assessment of contamination, to provide corporate income tax credits, and to accelerate expense deductions (Schriner, 18). Interaction between public health authorities, city planning, civil engineering, and impacted communities has also increased significantly over the past

several years in order to redevelop these urban eyesores (Greenberg, 1759).

The generation, transport, treatment, and disposal of hazardous wastes is regulated under the Resource Conservation and Recovery Act which Congress passed in 1976. This Act has had tremendous impacts on brownfield redevelopment. First, it has established a costly regulation of underground storage tanks, and this regulation poses a problem for potential developers of brownfield sites because of the additional cost. Secondly, the Resource Conservation and Recovery Act also provides authority for governments and/or citizens to require cleanup at sites that "may present an imminent and substantial endangerment to health or the environment" or where there is a release of hazardous waste in violation of a permit or other requirement of the Act (Davis and Margolis, 16).

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 provides an elaborate liability scheme for the remediation of virtually all contaminated sites (Davis and Margolis, 16). It extends liability to all sites contaminated with even modest amounts of one or more hazardous substances, and it requires any party who owns brownfields, whether or not they caused the contamination, to be responsible for cleanup. Because of this, prospective buyers overlook brownfield sites when looking for areas to develop (Westfall, 28). Under this Act, liability is joint and several. This means that any party liable under the statute may be held responsible for the entire cost of a site cleanup without regard

to the extent of its contribution to the property's condition. Liability is also strict under the Comprehensive Environmental Response, Compensation, and Liability Act, which means that a party can be liable for cleanup costs without regard to fault. Potentially responsible party liability is notwithstanding that its hazardous waste disposal practices were legal at the time the disposal occurred thus making liability retroactive (Kibel, 589).

Because of the stipulations found in the Comprehensive Environmental Response, Compensation, and Liability Act, cleanup of contaminated sites has more times than not been a very slow, drawn out, costly, and avoided task. Potentially responsible parties have often times found that it is cheaper to litigate for years rather than pay for remediation. Because of this Act, banks refuse to foreclose on loans, and properties are abandoned. Investors and banks have refused to redevelop contaminated property or potentially contaminated property for fear of becoming a potentially responsible party. Even with potentially responsible party action, there has been a lack of activity on the actual remediation front; therefore, brownfields become untouchables from an investment and business standpoint (Kibel, 589).

Besides the above-mentioned problems with the Comprehensive Environmental Response, Compensation, and Liability Act, other problems with Superfund have been found. It generally takes an average of seven years for any type of action to occur, and the average cost to cleanup one site is around fifteen million

dollars. The major problem with this act, however, is that few sites are ever actually remediated (Petrovich, 16).

Because of these problems, many programs have been created to allow for brownfield redevelopment. Since 1995, the Environmental Protection Agency has funded one-hundred and twenty-one brownfield assessment pilots in order to combat some of the problems with the Comprehensive Environmental Response, Compensation and Liability Act (Rasher, 54). The Environmental Protection Agency has established a pilot grant program which not only assists municipalities in establishing policies and procedures to more effectively deal with local brownfield sites, but it also provides 200,000 dollars to municipalities for brownfield inventory and characterization (Petrovich, 16).

The Superfund Amendments and Reauthorization Act has also been created. This Act allows for an "innocent landowner defense." Under this Act, the prospective purchaser is supposed to be protected so that polluted properties can be redeveloped, but this Act has largely been ineffective (Kibel, 589). The Small Business Administration has established a program which encourages federal agencies to favor small businesses when awarding government contracts. This Administration recognizes that smaller enterprises are often underbid by large companies, and it also recognizes that there are valid policy reasons for providing some degree of protection for these smaller enterprises. The Small Business Administration's main goal when attempting to redevelop brownfield sites is to promote and protect neighborhood and community-based businesses (Kibel, 589).



There are also other possible federal brownfield redevelopment programs in the works. One is an Environmental Protection Agency program that expressly favors community enterprises in the granting of liability releases. This not only encourages brownfield redevelopment, but it also allows for local businesses to profit from the site improvement. Another program, which has been created by Restoration Advisory Boards, promotes environmental cleanup of closed military bases (Kibel, 589). On top of all of these federal programs to enhance and encourage brownfield redevelopment, many states have offered additional support and financial contributions (Rasher, 54).

State and federal laws and regulations affect the brownfield redevelopment process significantly. Many of these laws and regulations offer enhanced protection to investors who are willing to purchase sites with real or perceived hazardous waste problems, and they also provide a regulatory framework that will point the private sector in a more environmentally progressive and equitable direction. State and federal governments can refuse to accept lower cleanup and health standards for properties located in poor inner-city neighborhoods, and they can develop more powerful tax incentives to ensure that brownfield redevelopment loans from private banks are made to businesses from within distressed neighborhoods. On top of all of this, state and federal governments can adopt policies that link prospective purchaser and lender liability protections to whether the proposed redevelopment project will have tangible health and economic benefits to the local community

(Kibel, 589).

Out of all of the federal programs that have been created for brownfields, one of the most influential programs has been the Environmental Protection Agency's Brownfield's Action Agenda (EPA Agenda). This Agenda has changed the view about brownfields from a negative one to a view of opportunity. It limits the liability of banks and real estate developers, and it provides inner-city residents with a strategy to improve the economy and environmental health of their communities. It has allowed for a CERCLIS delisting in which the Environmental Protection Agency has removed more than 25,000 properties from the national tracking list of contaminated sites, but at the same time it has established land use restrictions in which new owners of redeveloped property must limit future use of the site to commercial and industrial purposes in exchange for the Environmental Protection Agency's release of remediation liability. It has set up prospective purchaser agreements in which the Environmental Protection Agency is not to sue new owners for environmental remediation costs for contamination that occurred prior to purchase, and it has also established remediation goals regarding formerly, federally owned property. The EPA Agenda has created national and regional brownfield pilots in which the Enviornmental Protection Agency provides grants to states and local governments to help promote environmental cleanup and redevelopment of contaminated properties, and it has established Community Reinvestment Act credits that allow banks to fulfill the Community Reinvestment

Act's local-lending obligations by providing loans for environmental remediation and brownfields redevelopment. Further liability protections for banks and lending institutions are also provided by the Environmental Protection Agency's Brownfield's Action Agenda (Kibel, 589).

Many state governments have created brownfield redevelopment programs of their own, and Indiana is one of these states. In 1992, the Indiana government created the Voluntary Remediation Act. According to the Act, cleanup of a brownfield site is to take from four to twenty-four months depending on the site, and fees and oversight costs apply. The Indiana Department of Environmental Management has cleanup guidance that allows for use-based and risk-based cleanup standards, and the Act also allows for public notice and input into the cleanup process. Successful cleanup results in a covenant-not-to-sue relating to the area and contaminants addressed at the site (Davis and Margolis, 402).

Under Indiana's Voluntary Remediation Act, the applicant must submit a baseline ecological assessment along with the proposed cleanup criteria. There are three tiers of cleanup criteria, and these include tier I which is a cleanup to background levels, tier II which is a cleanup to generic, risk-based levels, and tier III which is a cleanup to site-specific, risk-based levels. Ultimately, remediation is to result in the prevention or minimization of future releases of hazardous substances and petroleum (Davis and Margolis, 405).

The Indiana Voluntary Remediation Act involves several steps.

To begin with, the applicant submits an application along with a one-thousand dollar fee and an environmental assessment. Then the Indiana Department of Environmental Management reviews the case and determines the applicant's eligibility. The applicant then submits a voluntary remediation work plan in which the description of work needed to determine the nature and extent of actual or threatened release, the proposed statement of work needed to accomplish remediation in accordance with guidelines established by the Indiana Department of Environmental Management, and plans for various aspects of remediation are included. After this, the applicant and the Indiana Department of Environmental Management enter a Voluntary Remediation Agreement. The Indiana Department of Environmental Management then reviews the work plan and public comments about the proposal. If the Indiana Department of Environmental Management commissioner approves the work plan, the applicant has sixty days to notify the state that it intends to proceed with the implementation, and if the plan is to be carried out, the work is completed. Finally, after work is completed, the Indiana Department of Environmental Management issues a certificate of completion and the governor issues a covenant-not-to-sue which bars all public and private claims under Title 13 of the Indiana Code in connection with the release or threatened release that was the subject of the work plan. This covenant-not-to-sue, however, does not protect the applicant against claims by the federal government, and it does not protect against future liability for a condition existing when the work

plan was approved and implemented. Also under the Voluntary Remediation Act, to be eligible for cost recovery, any cleanup performed must be consistent with the Comprehensive Environmental Response, Compensation, and Liability Act requirements for cost recovery. Even with this long, formal process, it is believed by many that Indiana has devised and implemented a "voluntary" cleanup program that works (Davis and Margolis, 405).

When a site is identified, some key factors need to be determined when considering redevelopment of that brownfield. First, the problem needs to be defined. Then, the risk of the site must be determined, and after these two steps are fulfilled it must be decided if the allocation of risk can be negotiated. If the allocation of risk can be negotiated, the process may continue (Fogel, 17).

After the above-mentioned decision-making keys in developing brownfields have been considered, a phase I site assessment must be completed. A phase I site assessment has many purposes. The main objective of a phase I is to expend reasonable effort to identify adverse environmental considerations related to the subject site. In a phase I site assessment, prior ownership and prior use of subject property are reviewed as well as federal, state, and local environmental databases to determine if property has been subject to regulatory problems. A review of available aerial photographs along with interviews of local regulatory personnel are also needed. The final component of a phase I site assessment is a site walkover in which a detailed search is conducted to find any adverse environmental conditions

that research alone has not indicated (Fogel, 17).

When redeveloping a brownfield, an economic assessment also needs to be completed. This is done to determine the marketability of a site. Viable sites include those that already have an infrastructure in place (Rasher, 54). Threshold sites are those sites that will not be redeveloped without some type of public assistance, those that have fewer economic advantages, and those that have a higher risk of environmental liability. Non-viable sites offer minimal economic advantages and hold a strong potential for environmental liability (Dennison, 145). The ideal sites for brownfield redevelopment projects are, therefore, the viable areas.

After a phase I site assessment and an economic assessment have been completed, a phase II site assessment is usually needed. In a phase II site assessment, a thorough search for soil and/or groundwater contamination is conducted. It determines the full measure of possible pollutants including such contaminants as organics, metals, petroleum-based products, and pesticides. A phase II site assessment must also demonstrate the extent of contamination, remediation costs, and the time period for remediation (Fogel, 17).

The next stage in the brownfield redevelopment process is project development and financing. At this stage, financial feasibility studies are completed, and financing for cleanup and redevelopment are arranged (Dennison, 146). The next step is to select and implement a cleanup plan. The final stage in the brownfield redevelopment process involves the construction

or alteration of the property to render it suitable for its new use (147).

Even though brownfields have real or perceived contamination, they are more times than not quite marketable. Many facts are needed for brownfield marketing in an ideal situation, however. These facts include such things as an up-to-date appraisal, extent and type of contamination, a list of potentially responsible parties, an approved remediation plan, the estimated cost of cleanup, the existing area utilities, boundary and encroachment identification, the existing and historical property use, the easements, any outstanding license agreements, and the current and planned adjacent property use (Oppenheim, 25).

Many factors make brownfields quite marketable. Brownfields already have infrastructure such as roads, water systems, sewer lines, and utilities in place (Rasher, 54). Tax abatements that provide incentives to use innovative technologies in remediation or that encourage permanent remedies for brownfield site cleanups have been created by federal and state governments. In addition to these two key marketing plans, several financial incentives have been devised. These include state-sponsored loans, bond funds, preferred tax treatment, reimbursement of remediation cost, and opportunity zones in which properties in these zones are eligible for tax abatements over a period of years to help developers recoup cleanup costs (McGahren and Hatfield, 42).

The federal government has devised several federal economic incentives to increase the marketability of brownfields. Two

— billion dollars in tax credits have been set aside for developers that are involved in brownfield projects, and the Internal Revenue Service has provided some economic relief for developers of brownfield properties by allowing project costs associated with site remediation to be expensed and recaptured in one year. About ten percent of the 500,00 to 750,000 brownfield sites are candidates for private redevelopment dollars, but they must have certain components to be eligible. These components include real-estate fundamentals, transportation access, infrastructure, and utilities and amenities (Petrovich, 16). On top of all of these market schemes, other incentives to remediate contaminated properties have been created. They are liability relief or covenants-not-to-sue, greater flexibility in cleanup standards, relaxed remediation requirements, tax relief, and letters that promise no further action (McGahren and Hatfield, 42).

Even though the above-mentioned factors make brownfields highly marketable, some issues may add to the cost of a property. Excavating and disposing of contaminated soils is quite costly, and construction can be made impossible by passive gas interception and collection venting systems. Also, there is a high cost associated with situations in which a high groundwater level exists or deep excavation is required (Fogel, 17). If these related costs issues become too high, the marketability of the brownfield site is decreased significantly.

— One of the main issues that must be addressed when redeveloping a brownfield is the sale price of the property.



The sale price must reflect the property's "highest and best use." In an ideal situation, a phase II site assessment has been completed, and it may be justified in some cases to implement the cleanup to eliminate all environmental uncertainties. Several guidelines need to be followed when establishing a fair sale or lease price for a brownfield property. The remediation plan that has been approved by regulatory agencies as well as any corresponding cleanup costs must be added. Entrepreneurial risk and the potential ongoing liability assumed by the buyer must also be considered (Oppenheim, 25).

There are, however, alternatives to setting a fair sale or lease price. One alternative is to establish a price based upon the highest and best use valuation and perceived environmental risk with the buyer being held responsible for all environmental due diligence. Another alternative is to have a price based on the highest and best use valuation with the understanding that the estimated cleanup costs and entrepreneurial risk will be deducted from the sale price at the time of the sale. Land leases or built-to-suit leases are also other alternatives. These leases eliminate the negotiating value specific to perceived environmental risk and ongoing uncertainties, and they also minimize the task of negotiating appropriate environmental indemnification (Oppenheim, 25).

Buyers and sellers of brownfield properties have certain goals. The purchaser of a brownfield property has three major objectives. The first is to make sure that the seller has

sufficient financial resources and long-term staying power to assure that the financial resources will be available if needed. The purchaser also wants to be indemnified against all environmental liabilities arising from property contamination without limitation, and the buyer also wants to be able to negotiate with relevant government agencies in which the buyer agrees to perform certain remediation activities in exchange for an assurance that the government will not bring legal action. The seller's main goal is to try to limit the dollar amount or time period that an indemnification lasts (Fogel, 17). If all of these objectives are met, a successful transfer of ownership can be made. It is also important to remember that every brownfield redevelopment deal is unique (Petrovich, 16).

Liability relief is an important component of brownfield redevelopment. Liability relief reduces future environmental uncertainties for property purchasers and developers. It often protects innocent purchasers and developers from liability if they agree to clean up a site, and it may also include a release of liability to future property owners who acquire the site after remediation. Protection is granted to the purchaser or developer in the form of a covenant-not-to-sue. A covenant-not-to-sue guarantees that no legal action requiring additional remedial work after cleanup is completed will be enforced, it protects the purchaser or developer from civil liability, and it also offers protection against third party claims relating to contamination (McGahren and Hatfield, 42). Environmental indemnification is often times granted to the purchaser or

developer. An environmental indemnification is an insurance policy in which the seller agrees to pay any claims or fines brought against the buyer as a result of environmental damage. It usually includes a promise to pay for legal defense in any action, and it usually covers third party claims for personal injury or property damage, civil or criminal actions by state and federal government, orders for remediation, and reasonable attorney's fees (Fogel, 17).

There are a few stipulations pertaining to liability relief that must be considered, however. The party completing the cleanup must maintain compliance with environmental laws, regulations, and conditions imposed on the site by the state, and potentially responsible parties are generally ineligible for protections. Also, some states limit the scope of protection to on-site contamination (McGahren and Hatfield, 42). Even with these few clauses, liability relief is quite beneficial.

The cleanup standards for contaminated sites are usually very stringent and difficult to obtain, so in order to redevelop brownfields, federal and state governments have had to adjust the cleanup standards for these sites. The cleanup standards for brownfield sites now have greater flexibility. The cleanup process has been streamlined to allow program participants to prepare their own remediation plans, and in many cases the cleanup goals may not need to conform to more stringent residential standards if the intended use of the property is industrial. In other words, cleanup may only need to be proportional to the future use. In some cases, it may only

be required to contain the contaminant rather than to eliminate it, and sometimes, land use or deed restrictions may be used as remedial options (McGahren and Hatfield, 42). Even with these new cleanup standards, the cost of cleanup can be quite expensive. It is estimated that the remediation of an old gas station costs between 10,000 dollars and 15,000 dollars, and cleanup of other problems may take between several thousand dollars to even twenty million dollars (Westfall, 28). Without the greater flexibility in cleanup standards, brownfields may not be economically worth redeveloping.

After remediation has been completed, a No Further Action Letter is issued. The state Environmental Protection Agency issues a letter certifying that the site has been remediated to the agency's satisfaction, but the letter is not permanent. The state retains the right to reopen the case, and some states promise not to impose further remediation requirements on innocent parties that complete a cleanup as long as they comply with all regulation requirements imposed on the property pursuant to the cleanup plan (McGahren and Hatfield, 42). This letter is the closing step in the brownfield redevelopment process.

Undeveloped brownfield properties are the neighborhood equivalent of cancer. They are eyesores that lower nearby property values, drive away investors, and require local governments to cordon them off to protect the public (Greenberg et al., 1979). When a brownfield site is considered for redevelopment, many problems can be found. These problems include overcoming barriers to cleanup, liability concerns,

and concerns about health effects. Communities are also faced with mounting brownfield cleanup costs without consideration of the property's future use or without cost being considered, and future businesses may have to compromise on what they want. In addition to these problems, redevelopment of these sites is legally and technically more involved (Rasher, 54). After the barriers to redevelopment are cleared another problem exists. Generally, the government places less stringent cleanup standards on the site; therefore, the property is not as "decontaminated" as it could be (Kibel, 589).

Even with these problems and disadvantages of redeveloping brownfields, the benefits significantly outweigh the negative aspects. The benefits to those involved in the redevelopment are an excellent place to start. From a municipality perspective, brownfield redevelopment puts tax-generating properties that have been undervalued or not producing any tax revenue back into productive use. Site owners benefit from redevelopment because it provides an opportunity to sell property that previously was not marketable because of the stigma of real or perceived environmental contamination. Brownfield redevelopment provides regulatory agencies the opportunity to close out files on greater numbers of remediated sites, and it provides lenders an opportunity to expand their markets by providing project financing. Brownfield redevelopment is also pleasing to environmental groups. It helps to preserve greenspace, control urban sprawl, and remediate environmental contamination problems on properties which had been languishing

under more traditional regulatory programs (Petrovich, 16).

Besides the advantages to interested parties, brownfield redevelopment also provides several other benefits. Brownfield redevelopment cleans up and improves the economic and environmental conditions in many poor and minority neighborhoods (Kibel, 589). It also revives community tax bases, generates additional revenue for communities and for utilities that supply energy to the sites, adds jobs, improves aesthetics, and improves the overall community environment. Brownfield sites already have infrastructure in place, and redevelopment of these sites can cost less than developing greenfields. State and federal assistance may be available as well as technical assistance. Companies and communities can avoid costly and mandatory cleanup orders by using cleanup methods and standards that have greater flexibility. Investigation, government oversight and approval, and remediation may be quicker, and there may be less interference with site development. On top of all of these benefits, the risk of future cleanup is reduced, and future landowners and lenders can be exempt from liability (Rasher, 54). When considering all of these positive aspects, brownfield redevelopment sounds like an excellent idea, and with proper site selection and procedures, it is.

Over the past several years, brownfield redevelopment has begun to emerge as an acceptable alternative to greenfield development and abandonment of urban commercial and industrial sites. It is a way that a contaminated site can be remediated if need be, marketed, and beneficially reused. By applying

practical knowledge and intelligent marketing strategies, economic vitality and environmental protection can be achieved in a win-win manner. Even with the legal and technical aspects that must be undertaken to redevelop a brownfield, the end result of a sustainable, remediated, and economically desirable site are worth the effort.

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